REMARKS

Reconsideration of the application in view of the above amendments and the following remarks is respectfully requested.

The Examiner states that the drawings are objected to under 37 C.F.R. § 1.83(a) in that the drawings must show every feature specified in the claims. The Examiner states that the limitations of "PMOS MUX", "NMOS MUX" of claims 5 and 9 must be shown or the feature(s) canceled from the claim(s).

Enclosed is a copy of Page 1 of the drawings in which drawing corrections have been made. In Figure 1, the terms "PMOS" and "NMOS" contain a typographical error, which has been corrected in red on the attached sheet. It is respectfully submitted that those skilled in the art would quickly recognize this typographical error and that the presence of these terms in Figure 1 provides support for the recitations in claims 5 and 9. In addition, claims 5 and 9 have been reworded in order to make the meaning clearer for the Examiner.

In reviewing the drawings, it was noticed that the connection of the input 20 to the line which connects the "B" input to the upper MUX 13 and the input "A" to the lower MUX 15 is omitted from figures 1, 2a, 2b and 2c. The connecting dots have therefore been inserted in red on the enclosed copy of these figures.

The Examiner's approval of these drawings changes is respectfully requested. Once the Examiner has approved the drawing changes, a replacement sheet will be provided.

The Examiner rejects claims 5 and 9 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner's rejection is based on the same terms "PMOS MUX" and "NMOS MUX" as the drawing rejections. As discussed above, these claims have been amended in order to clarify the claims for the Examiner.

The Examiner rejects claims 1-16 under 35 U.S.C. § 102(b) as being anticipated by Kaplinsky, United States Patent 5,920,210. The Examiner states that Figure 2 shows a buffer circuit comprising a plurality of multiplexers circuits having a common input node, a common output node, and a lower output node, wherein the plurality of MUXs are configured to generate output signal at upper and lower nodes in response to the input signal that during an input transition at the input, the upper and lower nodes are never on simultaneously.

This rejection is respectfully traversed. It is well known to those skilled in the art that it is undesirable to have both the pull-up and pull-down transistors in the output stage on at the same time because this causes a phenonomin often called "shoot-through" current or "crowbar" current. In Kaplinsky, the signal utilized to operate the multiplexer 45, for example, is generated by gate 65 whereas the signal used to operate the multiplexer 46 is generated by gate 66. As is well known in the art, it is common to have the trigger points for these gates to be different so that when the input is transitioning the gate which is generating the enable signal will still be on while the gate which generates the compliment of the enable signal will also be triggered, thus producing the shoots-through current or crowbar current in the output. If the solution were as easy as simply to use two different gates, to generate these inverse functions, the problem would have been solved long ago in the prior art. It should also be noted that the tri-state ability for this circuit tri-states the drivers to both of the output transistors utilizing an external signal, in order to tri-state the digital interface circuit. It is not used to tri-state the drive to the output during a time of transition but used to tri-state the outputs until the tri-state signal is removed from the device.

In sharp contrast, the present invention places the drive multiplexers in a tri-state state during the transition, which eliminates the possibility of both drivers being on at the same time. This is not just a wish, as in Kaplinsky, but a hard circuit implementation which guarantees the end result. Thus, while Kaplinsky desires that both the output devices not be on simultaneously, Claim 1 recites that they are never on simultaneously, a feature which can not be provided by the Kaplinsky circuit. Accordingly, the independent claims 1 and 7 are clearly distinguished from the

Kaplinsky reference. With respect to Claim 11, it recites that the pre-drivers should both be in the tri-state condition simultaneously, a feature which is not shown or suggested by Kaplinsky for utilization during the changing of the input signal, as recited in Claim 11. Accordingly, Claim 11 is clearly distinguished from Kaplinsky. With respect to Claim 13, this claim has been combined with Claim 14 in order that the claim recite that both drivers are simultaneously tri-stated during the input transition. Accordingly this claim is also clearly distinguished from the Kaplinsky reference. Claim 14 has been cancelled without prejudice.

According, Applicants believe the Application, as amended, is in condition for allowance, and such action is respectfully requested.

Respectfully submitted,

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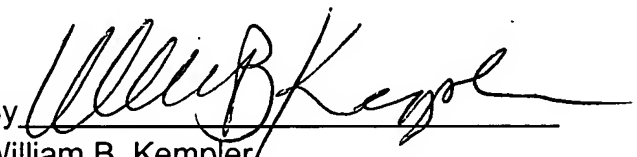
By 

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